

Amendments to Claims

This listing of claims will replace all prior versions, and listings, of claims in the above-referenced application.

Listing of Claims

1. (original) An alkylphenol ethoxylate-free polymer binder, said polymer binder formed by emulsion polymerization and having a peel value of 35 % to 200 % of a standard alkylphenol ethoxylate-based polymer binder control and a cure profile in which 55 % cure is achieved within 30 seconds of being exposed to a temperature required for cure, said polymer binder having properties that render it effective as a binder in a crepe process.
2. (original) The polymer binder of claim 1 wherein said crepe process is a double recrepe process.
3. (original) The polymer binder of claim 2 wherein the peel value is 50 to 125 % of control binder.
4. (original) An alkylphenol ethoxylate-free polymer binder, said polymer binder formed by emulsion polymerization and having a peel value of 35 % to 200 % of a standard alkylphenol ethoxylate-based polymer binder control and a cure profile in which 55 % cure is achieved within 30 seconds of being exposed to a temperature required for cure, said polymer binder having properties that render it effective as a binder in a double recrepe process.
5. (new) A crepe process which comprises applying a polymeric binder to a nonwoven web, and creping the nonwoven web on a creping drum, wherein the polymeric binder is an alkylphenol ethoxylate-free polymeric binder formed by emulsion polymerization, the polymeric binder having a peel value of 35 % to 200 % of a standard alkylphenol ethoxylate-based polymer binder control and a cure profile in which 55 % cure is achieved within 30 seconds of being exposed to a temperature required for cure.

6. (new) The crepe process of claim 5 wherein said crepe process is a double recrepe process.

7. (new) The crepe process of claim 5 wherein the peel value is 50 to 125 % of control binder.

8. (new) A double recrepe process comprising creping a base sheet or a nonwoven web on a creping drum, applying a polymeric binder to one side of the base sheet or web, creping again on a creping drum, applying the polymeric binder to a second side of the base sheet or web, and creping a third time on a creping drum, wherein the polymeric binder is an alkylphenol ethoxylate-free polymeric binder formed by emulsion polymerization, the alkylphenol ethoxylate-free polymer binder having a peel value of 35 % to 200 % of a standard alkylphenol ethoxylate-based polymer binder control and a cure profile in which 55 % cure is achieved within 30 seconds of being exposed to a temperature required for cure.

9. (new) The double recrepe process of claim 8 wherein the peel value is 50 to 125 % of control binder.

10. (new) The double recrepe process of claim 8 wherein the alkylphenol ethoxylate-free aqueous polymer emulsion is formed by reacting vinyl acetate, ethylene, and one or more crosslinking monomers, under emulsion polymerization conditions, in the presence of a combination of an anionic surfactant and a nonionic surfactant, wherein said anionic surfactant is a sodium laureth sulfate having 1 to 12 moles of ethylene oxide, said nonionic surfactant is a secondary alcohol ethoxylate containing 7 to 30 moles of ethylene oxide or an ethoxylated branched primary alcohol containing 3 to 30 moles of ethylene oxide, said primary or secondary alcohol containing 7 to 18 carbons.

11. (new) The double recrepe process of claim 8 wherein the one or more crosslinking monomers is selected from the group consisting of a N-(C₁₋₄) alkylol (meth)acrylamide, *i*-butoxy methylacrylamide, acrylamidoglycolic acid, acrylamidobutyraldehyde, a dialkyl acetal of acrylamidobutyraldehyde, said alkyl having 1 to 4 carbons, and acrylamide in combination with one or more of the aforementioned crosslinking monomers.

12. (new) The double recrepe process of claim 11 wherein the self-crosslinking monomer is N-methylol acrylamide.

13. (new) The double recrepe process of claim 12 wherein the alkylphenol ethoxylate-free aqueous polymer emulsion comprises 50 to 90 wt % vinyl acetate, 5 to 49 wt % ethylene, and 1 to 10 wt % of N-methylol acrylamide, based on the total weight of monomers, and the weight ratio of anionic to nonionic surfactant ranges from 4:1 to 5:1.

14. (new) The double recrepe process of claim 12 wherein the alkylphenol ethoxylate-free aqueous polymer emulsion comprises 70 to 85 wt % vinyl acetate, 10 to 30 wt % ethylene, and 3 to 8 wt % of N-methylol acrylamide, based on the total weight of monomers.

15. (new) The double recrepe process of claim 13 wherein said anionic surfactant is a sodium laureth sulfate containing 2 to 5 moles of ethylene oxide and said nonionic surfactant is a secondary alcohol ethoxylate having 12 to 20 moles of ethylene oxide or an ethoxylated branched primary alcohol containing 9 to 20 moles of ethylene oxide.

16. (new) The double recrepe process of claim 13 wherein said anionic surfactant is a sodium laureth sulfate containing 4 moles of ethylene oxide and said nonionic surfactant is a secondary alcohol ethoxylate having 20 moles of ethylene oxide.

17. (new) The double recrepe process of claim 13 wherein said nonionic surfactant is tridecanol ethoxylate containing 9 to 20 moles of ethylene oxide.

18. (new) The double recrepe process of claim 13 wherein the weight ratio of anionic surfactant to nonionic surfactant is 65:35.